

Remarks

Claims 1-20 are pending in the application. Claims 1-12 and 14-20 are rejected, and claim 13 is objected to. By this paper, claims 2-4 and 7 are amended. Based on the following, consideration of the amended claims, and reconsideration of the remaining claims, are requested.

Examiner Interview

Applicants thank the Examiner for the telephonic interview conducted on August 10, 2004. During the interview, Applicants noted that the Examiner cited specific portions of a French patent (FR2784626, Bastien et al.) as the bases for rejecting claims 1-7, 10-12 and 14-19. Applicants then inquired as to whether an English language translation of Bastien et al. was available. The Examiner indicated that the translation was not currently available, but that one would be ordered and supplied to Applicants as soon as it was available. Subsequent to the interview, Applicants obtained an English language translation of the reference. Applicants phoned the Examiner on August 16, 2004, to inquire if a response to the Office Action could be submitted, relying on the recently obtained translation. The Examiner stated that this was acceptable.

Specification

By this paper, the specification is amended to update the status of the parent application of this application.

Claim Rejections—35 U.S.C. § 112

The Examiner rejected claims 2-5 and 15-20 under 35 U.S.C. § 112, second paragraph. In particular, the Examiner rejected claim 2, stating that the term "certain efficiency" is indefinite. Applicants respectfully traverse this rejection. The term "certain

efficiency" is directly associated with a catalytic converter previously defined within the claim. Moreover, the first time the term "certain efficiency" is used, it is preceded by the indefinite article "a"; whereas, when it is referenced again, the term "certain efficiency" is preceded by the definite article "the". Therefore, Applicants maintain that the term "certain efficiency" is not indefinite of itself, and that the claim contains proper antecedent basis. Traversal of the rejection notwithstanding, claim 2 has been amended to remove the modifier "certain".

The Examiner rejected claim 3, stating that the term "detected cold-start condition" should be "said detected cold-start condition." By this paper, claim 3 is amended to replace the indefinite article "a" with the definite article "the", which is equivalent to the definite article "said". The Examiner also rejected claim 4, stating that the term "certain spark timing" is indefinite. As with claim 2, Applicants respectfully traverse the rejection, maintaining that the term "certain" does not render indefinite a recited element. Traversal of this rejection notwithstanding, claim 4 is amended by this paper to remove the modifier "certain". The Examiner also rejected claim 7, stating that the term "slowly lowering the positive torque" is indefinite. By this paper, claim 7 is amended to remove the modifier "slowly".

The Examiner further rejected claim 15, stating that the phrase "the detection based on at least some of the measured vehicle operating conditions" is indefinite. Applicants respectfully traverse the rejection, noting that claim 15 recites "a plurality of sensors for measuring vehicle operating conditions," which provides the antecedent basis for a later reference to one, at least one, some, at least some, or all of the measured vehicle operating conditions. Therefore, when claim 15 later recites "at least some of the measured vehicle operating conditions," it is not indefinite, but specifically refers to the measured vehicle operating conditions previously recited.

Based on the foregoing, Applicants believe each of the § 112 rejections to be overcome.

Claim Rejections—35 U.S.C. § 102

The Examiner rejected claims 1-7, 10-12 and 14-19 under 35 U.S.C. § 102(e) as being anticipated by Bastien et al. As discussed above, Applicants have relied on an English language translation of the Bastien et al. reference in responding to the § 102 rejections. A copy of this translation is included with this amendment. The MPEP states that "'a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.'" MPEP § 2131, 8th ed., Rev. 2 (citation omitted). The MPEP further states that "'the identical invention must be shown in as complete detail as is contained in the... claim.'" *Id.* (citation omitted). As discussed below, each of the pending claims contains elements that are neither expressly nor inherently described in Bastien et al.

Claim 1 of the present application recites "detecting at least one of a cold-start condition and a transient event; and selectively providing a torque to the engine by use of the electric machine, the torque having a value based on the detection and being effective to alter operation of the engine in a manner which reduces exhaust emissions." No such elements are expressly or inherently described in Bastien et al. On page 6 of the English language translation, which includes the portions of page 5 and 6 of the original French document cited by the Examiner, there is described the use of an electric motor "to supply engine torque corresponding to the torque requirement, so as to maintain the exhaust-gas temperature within a temperature range allowing NO_x storage, while supplying the combustion engine with a lean fuel mixture...." Thus, operation of the electric motor is not "effective to alter operation of the engine in a manner which reduces exhaust emissions," as specifically recited in claim 1. Rather, the motor in Bastien et al. is operated so that the engine can maintain its operating state, so that it specifically does not have to be altered.

This is further described in Bastien et al. in the translation at the bottom of page 14 and the top of page 15, where it says "Figures 3A to 3D show a control mode of an engine group according to the invention that allows, during an acceleration of the type described

above, *maintaining* thermal engine 12 in a lean operating mode..." (emphasis added). Therefore, the method described in Bastien et al. is specifically used to maintain the engine in its current operating mode so that it does not have to be altered. This is in direct contrast to claim 1 of the present application, which specifically recites that the torque provided by the electric machine is effective to alter operation of the engine.

Bastien et al. goes on to state that if the motor cannot provide sufficient torque, then "the engine operating mode must be switched, thermal engine 12 then being supplied with stoichiometric fuel mixture and being controlled so as to deliver an engine torque C_{mot} equal to the torque demanded by the driver." (Translation, page 17, paragraph 1.) It is clear that the only time the engine operation is altered in the method of Bastien et al. is when the motor is not able to supply sufficient torque. Thus, operation of the motor in Bastien et al. is not "effective to alter operation of the engine;" in fact, when the engine operation is altered, it is in spite of, and not the result of, the operation of the motor. When the motor can supply sufficient torque, the operation of the engine is maintained, not altered.

Therefore, the elements of claim 1 of the present application are not expressly described in Bastien et al. The elements of claim 1 are also not inherently described in the Bastien et al., particularly considering that Bastien et al. teaches away from the present invention, by using the electric motor for a purpose that is directly counter to its use in the present invention: Bastien et al. uses the motor to *maintain* an engine operating state; whereas, the present invention uses the motor to "alter operation of the engine in a manner which reduces exhaust emissions." Thus, claim 1 contains elements which are neither expressly nor inherently described in Bastien et al., and the MPEP definition of anticipation is not met.

Claim 1 is the base claim for claims 2-7. Each of these dependent claims contains all of the limitations of claim 1, as well as additional limitations which further distinguish it from the cited reference. For example, amended claim 2 recites "the value of the torque is negative when a cold-start condition is detected...." Nowhere does Bastien et al. expressly or inherently describe detecting a cold-start condition, and providing a negative

torque with an electric machine when a cold-start condition is detected. Similarly, claim 6 recites "wherein the value of the torque is positive when a transient event is detected, the positive torque being effective to supplement torque provided by the engine and lower a power output of the engine...." In contrast to claim 6, Bastien et al. uses an electric motor to supplement torque from an engine so that the engine can be operated with a lean air-to-fuel (A/F) ratio, but does not describe lowering a power output of the engine. Rather, Bastien et al. uses the electric motor to avoid enriching the A/F ratio supplied to the engine. In this way, the engine can continue to run with a lean A/F ratio, but the power output of the engine need not be lowered. Thus, claims 2-7 contain elements which are neither expressly nor inherently described in Bastien et al., and with regard to these claims, the MPEP definition of anticipation is not met.

Similarly, claim 10 of the present application recites "selectively providing a positive torque to the drive train by use of the electric machine, the positive torque being effective to supplement the torque provided by the engine and lower the certain power output...." As discussed above, Bastien et al. does not describe using an electric machine to supplement the torque of an engine and lower the engine power output. Yet these elements are specifically recited in claim 10. Claim 10 is the base claim for claims 11, 12 and 14. Each of these dependent claims contains all of the limitations of claim 10, as well as additional limitations which further distinguish it from the cited reference. Therefore, claims 10-12 and 14 each contain elements which are neither expressly nor inherently described by Bastien et al., and with regard to these claims, the MPEP definition of anticipation is not met.

Similar to claim 1, claim 15 of the present application recites a controller that is "configured to detect at least one of a cold-start condition and a transient event... [and is] further configured to command the electric machine to provide torque to the engine based on the detection, the torque being effective to alter operation of the engine to reduce exhaust emissions." As discussed above in regard to claim 1, no such elements are expressly or inherently described in Bastien et al. The motor in Bastien et al. is used to provide torque so that operation of the engine can be maintained in its current state, and therefore does not need

to be altered. This is in contrast to claim 15 of the present application, which uses torque from the electric machine to alter operation of the engine to reduce exhaust emissions. Claim 15 is the base claim for claims 16-19. Each of these dependent claims contains all of the limitations of claim 15, as well as additional limitations which further distinguish it from the cited reference. Therefore, claims 15-19 each contain elements which are neither expressly nor inherently described in Bastien et al., and the MPEP definition of anticipation is not met.

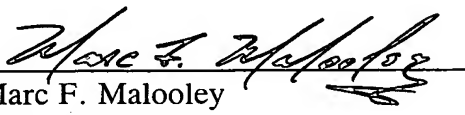
Allowable Subject Matter

The Examiner objected to claim 13, but stated that it would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. In addition, the Examiner stated that claims 8, 9 and 20 would be allowable if rewritten to overcome the § 112 rejections, and to include all of the limitations of the base claims and any intervening claims. As noted above, Applicants believe that each of the claims is in allowable form.

Based on the foregoing, allowance of each of the pending claims is requested.

Respectfully submitted,

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